

ELIMINATION OF RADIOACTIVE WASTE USING THE SUBDUCTION PROCESS AT TYPE-2 TRENCHES: AN OPTION TO BE RECONSIDERED

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The safe disposal of nuclear waste, particularly as regards the need to protect humans and the environment in the future has become an international concern. To dispose of the waste in rock, deep underground in a so-called geologic repository, widely accepted as the best mean of protecting the public health and the environment dates back to 1957 when recommended by the US National Academy of Sciences. Although investigated and accepted as a model by many countries today, the 1982 Nuclear Waste Policy Act established by the US Congress is based on old scientific analysis and concepts, as old as 35 years at least.

During the past 15-20 years, the works done at sea, especially in the frame of the DSDP and ODP international programs, allowed the concepts regarding processes working at ocean convergent margin to evolve drastically. Today, it is well established that sediment subduction occurs at two different types of convergent margins: Type-1 margins where thrust slices of offscraped trench sediment pile up to form an accretionary prism, and Type-2 margins where little or no net trench sediment accretion takes place. Also, the origin, rate and role of fluid flow at convergent margins was deeply investigated. Along particular segments of the Andean subduction zone, venting fluids are continent-derived originating from the upper plate

Although the notion troubles environmentalists, disposal of nuclear refuse along specific segments of deep sea trenches merits consideration, the perspective being not only the disposing but also the elimination.